

**WHAT IS CLAIMED IS:**

1. A method of controlling transmission timing, comprising:  
combining time alignment bit (TAB) information received during a predetermined period;  
determining a timing renewal value based on the combination; and  
controlling the transmission timing according to the timing renewal value.
  
2. The method of claim 1, further comprising selecting multiple units of the TAB information, on the basis of a predetermined threshold value, prior to combining the selected units of TAB information.
  
3. The method of claim 1, wherein the timing renewal value is determined by comparing a total value of the combined TAB information with a predetermined threshold value.
  
4. The method of claim 1, further comprising assigning a weighting value to each of multiple units of the TAB information prior to combining the weighted units of TAB information.
  
5. The method of claim 4, wherein each of the weighting values is assigned in accordance with the order in which the corresponding unit of TAB information is received.

6. The method of claim 5, wherein the weighting values are assigned according to a linear relationship.
7. The method of claim 1, further comprising decoding the received TAB information from a bi-orthogonal code, prior to combining the TAB information.
8. The method of claim 7, wherein the received TAB information are encoded by a bi-orthogonal code.
9. The method of claim 7, wherein the received TAB information are encoded by a time variant bi-orthogonal code.
10. A method of controlling timing, comprising:  
    checking the timing of a signal transmitted from a user equipment (UE);  
    determining a timing control command value according to a result of the timing check;  
    converting the timing control command value into a plurality of time alignment bit (TAB) information to control the timing; and  
    transmitting the plurality of TAB information to the UE.
11. The method of claim 10, wherein the timing control command value is converted into repeated TAB information.

12. The method of claim 10, wherein each bit of the converted TAB information is encoded by two bits.

13. A method of controlling a transmission time of uplink signals, comprising:  
receiving a plurality of time alignment bits transmitted from a base station during a predetermined period;

determining a deviation of the transmission time by combining the information of the plurality of received time alignment bits; and

controlling the transmission time of the uplink signals in accordance with the determined deviation.

14. The method of claim 13, wherein each of the plurality of time alignment bits provides complete information of the deviation of the transmission time for a specific time.

15. The method of claim 13, wherein no fewer than two of the plurality of time alignment bits provide complete information of the deviation of the transmission time for a specific time.

16. The method of claim 13, wherein the combining is done by adding the plurality of received time alignment bits.

17. The method of claim 16, wherein the value of each of the plurality of received time alignment bits is weighted in accordance with the corresponding order of receipt.

18. The method of claim 17, wherein later received time alignment bits are more heavily weighted.

19. A method of controlling a transmission time of uplink signals in a base station of a wireless communication system using an uplink synchronous transmission scheme, comprising:

setting a base time for receiving the uplink signals from a plurality of mobile stations;

receiving a particular uplink signal from one of the plurality of mobile stations;

determining a deviation of the transmission time from the base time by comparing the particular uplink signal's transmission time with the base time; and

transmitting a plurality of time alignment bits of a code sequence, from a set of bi-orthogonal code sequences, through a downlink channel to the plurality of mobile stations.

20. The method of claim 19, wherein the code sequence is repeatedly transmitted through the downlink channel.

21. The method of claim 20, wherein the bi-orthogonal code sequence is composed of two bits.

22. The method of claim 10, wherein the timing control command value is determined by various time units.

23. The method of claim 10, wherein the timing control command value is converted into a plurality of independent TAB information.

24. The method of claim 7, wherein the received TAB information are decoded from the bi-orthogonal code before between two and ten separate pieces of the TAB information, out of a total of ten pieces of the received TAB information, are combined.

2025 RELEASE UNDER E.O. 14176